

GRECHISHCHEV, Ye.S., inzh.; BONDAREV, V.I., inzh.

Torsion strength of press-fitted joints subjected to alternating
and static bending. Vest. mashinostr. 45 no.1:39-42 Ja '65.
(MIRA 18:3)

AUTHOR:

Bondarev, V. I.

TITLE:

Choice of optimum angles of inclination of
seismographs in azimuthal installations

PERIODICAL:

Akademiya nauk SSSR. Izvestiya. Seriya
geofizicheskaya, no. 3, 1963, 482-486

TEXT:

The author derives expressions for errors in the
azimuth and the exit angle of seismic rays

$$m_{\omega} = 57.3^{\circ} \sqrt{\frac{2}{n}} \frac{1}{\cos \psi \sin \varphi} m_y \quad (12)$$

$$m_{\varphi} = 57.3^{\circ} \sqrt{\frac{2}{n}} \left(\frac{\cos \varphi}{\cos \psi} + \frac{\sqrt{2}}{2} \frac{\sin \varphi}{\sin \psi} \right) m_y \quad (13)$$

Card 1/2

Choice of optimum...

S/049/63/000/003/003/005
D234/D308

which make it possible to find optimal angles of inclination of seismographs. It is found that the error in the determination of the azimuth will be minimal when $\psi = 0$. Conditions are derived for the angles of inclination to give maximum accuracy in the azimuth and the exit angle at the same time. A graph is given from which one can find optimum values of ψ for a given range of φ . It is stated that accuracy can be increased by 2.5 - 5 times using this method. The optimum values differ from those proposed by other authors. There are 4 figures.

ASSOCIATION:

Sverdlovskiy gornyy institut im. V. V.
Vakhrusheva (Sverdlovsk Mining Institute im.
V. V. Vakhrushev)

SUBMITTED:

June 4, 1962

Card 2/2

BOVDAREV, V.I.; SIVKOV, N.R.

Optimum angles of slope of seismic detectors in azimuthal
setups. Izv. AN SSSR. Ser. geofiz. no.8:1192-1194 Ag '64
(MIRA 17:8)

1. Sverdlovskiy gornyy institut im. V.V.Vakhrusheva.

BONDAREV, V.I.

Field of a disk electrode situated in a borehole. Izv.
AN SSSR. Ser. geofiz. no.3:476-481 Mr '63. (MIRA 16:3)

1. Sverdlovskiy gornyy institut imeni V.V. Vakhrusheva.
(Electrodes)

BONDAREV, V.I.

Assessing the precision of determining the directions of shifts of particles in azimuthal seismic observations as depending on the angular errors of the instrument. Izv. AN SSSR. Ser. geofiz. no.3:374-377 Mr '64. (MIRA 17:3)

1. Sverdlovskiy gornyy institut im. V.V. Vakhrusheva.

ACCESSION NR: AP4030340

BR
S/0049/64/000/003/0374/0377

AUTHOR: Bondarev, V. I.

TITLE: The precision of determining direction of particle displacement during azimuthal seismic observations in dependence on angular error of instrument setting

SOURCE: AN SSSR. Izv. Ser. geofiz., no. 3, 1964, 374-377

TOPIC TAGS: azimuthal setup, seismograph, seismic exploration, geophone, particle displacement

ABSTRACT: 'Since azimuthal observations are used in seismic prospecting for quantitative calculations as well as for qualitative determinations, it is important to examine the effects of various kinds of angular errors on determining particle displacement. Factors affecting the accuracy of such determinations are: 1) difference in effective slope angle of seismograph relative to the platform, the plane of which is used in the computations; 2) deviation of actual azimuth from that used in the computations; 3) error in levelling the platform of the azimuthal apparatus; and 4) error in orienting the platform by azimuth. The author examines each of these and discusses the limiting values possible for precise computation. He concludes that in planning and setting up azimuthal equipment special care must

Cord 1/2

ACCESSION NR: AP4030340

be exercised to keep the average possible errors of azimuth and seismograph inclination to a minimum. For seismic exploration, results will be satisfactory if these two sources of error are kept below $2-3^{\circ}$ (for azimuth) and $1-1.5^{\circ}$ (for inclination). It is necessary to keep the error between angular inclination of geophones and the horizontal platform to a value of 2° or less during field operation. If these conditions are met, the effect of errors in orienting geophones or in levelling the platform on the computed azimuth and vertical angle of the displacement vector becomes extremely small. It is concluded that the direction of particle displacement may be determined with satisfactory accuracy by an azimuthal setup. "In conclusion, the author expresses his thanks to the student N. R. Sivkov for testing the formulas and to M. M. Strelova for making the necessary computations." Orig. art. has: 2 figures and 15 formulas.

ASSOCIATION: Sverdlovskiy gorny* institut in. V. V. Vakhruшева (Sverdlovsk Mining Institute)

SUBMITTED: 11May63

DATE ACQ: 29Apr64

ENCL: 00

SUB CODE: ES

NO REF SOV: 003

OTHER: 000

Card 2/2

SUKURENKO, Ye.I.; GRIGOR'YEV, V.I.; BONDAREV, V.I.

Causes of circulation loss in the oil fields of the Kuban.
Burenie no.2:15-18 '65. (MIRA 18:5)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-
issledovatel'skogo instituta.

BONDAREV, V.I.

Measuring radii of profile gauges with radial heads. Izv. tekhn.
no.2:24-29 F '65. Izv. tekhn. no.2:24-29 F '65.

(MIRA 18:6)

ATLASOV, I.P.; BAKAR, V.A.; BONDAREV, V.I.; SYAGAYEV, N.A.; SOKOLOV, V.N.;
DIBNER, V.D.

Sketches of the tectonic structure of the central sector of the
Soviet Arctic. Trudy NIIGA 135:3-69 '63.

(MIRA 18:5)

BONDAREV, V.I.

Plan for the subdivision of Ordovician sediments in the southern
part of the Novaya Zemlya, Vaygach Island, and the northern
part of the Pay-Khoy. Uch. zap. NIIGA no.5:5-15 '64.
(MIRA 18:8)

OBUT, Aleksandr Mikhaylovich; SOBOLEI'SKAYA, Rimma Fedorovna;
BONDAREV, Valentin Il'ich; SOKOLOV, B.S., prof., otv.
red.; KALANTAROV, A.P., red.

[Silurian graptolites of the Taymyr Peninsula] Graptolity
silura Taimyra. Moskva, Nauka, 1965. 119 p.

(MIRA 18:8)

1. Chlen-korrespondent AN SSSR (for Sokolov).

L 60271-65 EWT(1)/EWA(h) Feb GW

ACCESSION NR: AP5017793

UR/0387/65/000/005/0082/0093
550.83

AUTHOR: Bondarev, V. I.

TITLE: A method of determining the parameters of elliptically polarized waves along cophasal axes of azimuthal seismograms

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 5, 1965, 82-93

TOPIC TAGS: seismograph, seismic wave, polarization, azimuth

ABSTRACT: Several methods have been used, including stereographic projection, to determine the parameters of complex waves. The author describes a method of determining such parameters of elliptically polarized waves along cophasal axes of azimuthal seismograms. The method is based on an analytical study of the basic form patterns of cophasal axes of azimuthal seismograms. Starting with an equation to express the cophasal axis of an elliptically polarized wave, expressions are found for determining the position of the polarization plane. Two methods are employed here: study of the systematic positions of extreme points of the cophasal axis and use of only cophasal axes with extremes, and use of characteristic points of the cophasal axis, which is suitable for cophasal axes with or without

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L 60271-65

ACCESSION NR: AP5017793

extremes. All computed formulas are easily reduced to rather simple nomograms and graphs (these are presented in the article) for determining azimuth, inclination of the normal to the polarization plane, and the form of the ellipse. Nomograms for cophasal axes both with and without extremes are provided. This simplicity of use makes the indicated method especially useful for bulk computations. Orig. art. has: 12 figures and 23 formulas.

ASSOCIATION: Sverdlovskiy gornyy institut im. V. V. Vakhrusheva (Sverdlovsk Mining Institute)

SUBMITTED: 11Dec63

ENCL: 00

SUB CODE: ES

NO REF SOV: 003

OTHER: 000

Card 2/2

BONDAREV, V.M.; GUBANOV, V.G.; KOROVIN, P.K.; OVCHINNIKOV, A.K.;
KHAYKOVICH, I.M.; NIKONOVA, A.I., red.

[Gamma-sampling of uranium ores in their natural occurrence] Gamma-oprobovanie uranovykh rud v estestvennom zaleganii. Moskva, Izd-vo "Nedra," 1964. 204 p.
(MIRA 17:7)

BONDAREV, V.N.,

Principal clinical and physiological variants of pyknolespy.
Vop.psikh. i nevr. no.1:41-50 '57 (MIRA 11:8)

1. Iz psikhiatricheskoy kliniki Leningradskogo pediatricheskogo
meditsinskogo instituta.
(PYKNOLEPSY)

BONDAREV, V.N.

The problem of galvanic skin reflexes in petit mal epilepsy in children. Vop. psikh i nevr. no.3:197-203 '58. (MIRA 12:3)

1. Iz psikhiatricheskoy kliniki Leningradskogo pediatricheskogo meditsinskogo instituta.
(EPILEPSY) (REFLEXES)

BONDAREV, V. N., Candidate Med Sci (diss) -- "On pyknolepsy in children (Clinical-experimental investigation)". Leningrad, 1959. 15 pp (Leningrad Pediatric Med Inst, Leningrad City Council of Workers' Deputies, Executive Committee, Dept of Health), 250 copies (KL, No 24, 1959, 148)

BONDAREV, V.N.

Galvanic cutaneous reflexes in "petit mal" in children. Zhur.
nevr.i psikh. 60 no.7:352-355 '60. (MIRA 14:1)

1. Kafedra psikhiiatrii (zav. - prof. S.S. Mnukhin) Leningradskogo
pediatricheskogo meditsinskogo instituta.
(EPILEPSY) (REFLEXES)

BONDAREV, V.N.; VIKTOROV, I.T.

Prospects for the development of the P.P.Kashchenko Leningrad
Psychoneurological Hospital. Vop.psikh.i nevr. no.7:28-32 '61.
(MIRA 15:8)
(LENINGRAD--~~PSYCHIATRIC~~ HOSPITALS)

BONDAREV, V.N., kand.med.nauk

Obsessive and compulsive states and their connections to epilepsy.
Vrach. delo no.12:141-144 D '61. (MIRA 15:1)

1. Leningradskiy pediatricheskiy meditsinskiy institut. Nauchnyy
rukovoditel' - prof. S.S.Mnukhin.
(EPILEPSY) (MENTAL ILLNESS)

BONDAREV, V.N.

Some data on electroencephalographic examination in pyknolepsy in
children. Vop.psikh.i narv. 8:389-391 '62. (MIRA 17:4)

BONDAREV, V.M.; VOYTINSKIY, Ye.Ya.

Character of the electroencephalogram in schizophrenic patients with a manifest psychic defect. Zhur. nevr. i psikh. 62 no.5:735-739 '62. (MIRA 15:6)

1. Leningradskaya psikhonevrologicheskaya bol'nitsa imeni P.P. Kashchenko (glavnyy vrach - kandidat meditsinskikh nauk V.M. Bondarev).

(ELECTROENCEPHALOGRAPHY)

(SCHIZOPHRENIA)

BONDAREV, V.N.

Pyknolepsy in children; clinical experimental studies. Zhur.
nevr. i psikh. 61 no.7:1083-1087 '61. (MIRA 15:6)

1. Leningradskaya psikhonevrologicheskaya bol'nitsa imeni
P.P. Kashchenko (glavnyy vrach V.N. Bondarev).
(EPILEPSY)

BONDAREV, V.N.; VOYTINSKIY, Ye.Ya.; DEDOV, V.F.

Late results of prefrontal leukotomy according to clinical,
X-ray and electroencephalographic data. Zhur. nevr. i psikh.
62 no.12:1874--1878 '62 (MIRA 16:11)

1. Leningradskiy psikhonevrologicheskiy institut imeni V.M.
Bekhtereva (dir.-kand. med. nauk B.A.Lebeder) i Leningradskaya
psikhonevrologicheskaya bol'nitsa imeni P.P.Kashchenko (glav-
nyy vrach L.P.Durova, nauchnyy rukovoditel'-prof. Ye.S.
Averbukh).

*

BONDAREV, V.N.

Neural and mental disorders in children during corticosteroid treatment. Zhur. nevr. i psikh. 63 no.7:1094-1096 '63.

(MIRA 17:7)

1. Leningradskiy nauchno-issledovatel'skiy institut detskikh infektsiy (dir. - prof. A.L. Libov).

BONDAREV, V.N.; VOYTINSKIY, Ye.Ya. (Leningrad)

Electroencephalographic studies in vaccinal encephalitis in children.
Zhur. nevr. i psikh. 65 no.7:1100 '65. (MIRA 18:7)

ACCESSION NR: AP4015267

S/0226/64/000/001/0065/0070

AUTHORS: Bondarev, V. N.; Samsonov, G. V.

TITLE: Production of molybdenum and chromium germanides

SOURCE: Poroshkovaya metallurgiya, no. 1, 1964, 65-70

TOPIC TAGS: molybdenum germanide, chromium germanide, germanium, VCh molybdenum, chromium, electrolytic chromium, TVV oven, OPPIR pyrometer, URS-50I x ray assembly

ABSTRACT: The purpose of this work was to determine optimal conditions for baking the initial materials to be used in obtaining Mo_3Ge and Cr_3Ge with a beta-W lattice. The initial materials were monocrystalline germanium with the specific electrical resistivity 3 ohm cm, molybdenum powder of the type VCh, and electrolytic chromium. Well dried and sieved (0.05 mm mesh), Mo and Ge powders were mixed for 12 hours and pressed into bars 12-14 mm long and 8 mm in diameter. The baking temperature was measured in a TVV-4 oven (under high argon pressure) with an OPPIR pyrometer. The x-ray analysis of the sample structure was made in the URS-50I assembly. The samples were baked at 980, 1000, 1300, 1600, and 1800C for different periods of time. It was established that Mo_3Ge can be obtained by

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ACCESSION NR: APL015267

baking the pressed samples at 1780-1800C for 4 hours. The temperature of the Mo₃Ge melting was 1830-1850C. The compound Cr₃Ge was obtained by a direct melting of the components at 1520-1540C. Orig. art. has: 4 tables.

ASSOCIATION: Institut problem materialovedeniya AN USSR (Institute on the Problems of Materials Science AN UkrSSR); Khimiko-metallurgicheskiy institut SO AN SSSR (Institute of Metallurgy SO AN SSSR)

SUBMITTED: 04Mar63

DATE ACQ: 12Mar64

ENCL: 00

SUB CODE: ML

NO REF SOV: 002

OTHER: 006

Card 2/2

Bondarev, V.N.

Investigation of synthesis of transition-metal

Title: Seminar on refractory metals, compounds, and alloys (Kiev, April 1963.

Source: Atomnaya energiya, v. 15, no. 3, 1963, 266-267

L 37689-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6017101

(N)

SOURCE CODE: UR/0226/66/000/001/0035/0040

AUTHOR: Bondarev, V. N. (Novosibirsk)

55
B

ORG: none

TITLE: Preparation of molybdenum and chromium germanides and the investigation of some of their properties

SOURCE: Poroshkovaya metallurgiya, no. 1, 1966, 35-40

TOPIC TAGS: molybdenum compound, chromium compound, germanium compound, powder metal sintering, porosity, temperature dependence, electric resistance

ABSTRACT: A sintering compression method for the preparation of Mo_3Ge and Cr_3Ge is described. The dependence of the porosity of the specimens on particle size, temperature, and duration of hot pressing was studied. In addition, the pycnometric and x-ray densities, microhardness, and electrical resistance of Mo_3Ge and Cr_3Ge were measured. The germanides were synthesized after the method of V. N. Bondarev and G. V. Samsonov (Poroshkovaya metallurgiya, No. 1, 65, 1964). The experimental results are presented in graphs and tables (see Fig. 1). It is concluded that the optimum conditions for the synthesis of Mo_3Ge are: 1650--1740C, compression time 3--5 min, particle size 50 μ ; for Cr_3Ge : 1450C, compression time 3--5 min and particle size

Card 1/2

L 37689-66

ACC NR: AP6017101

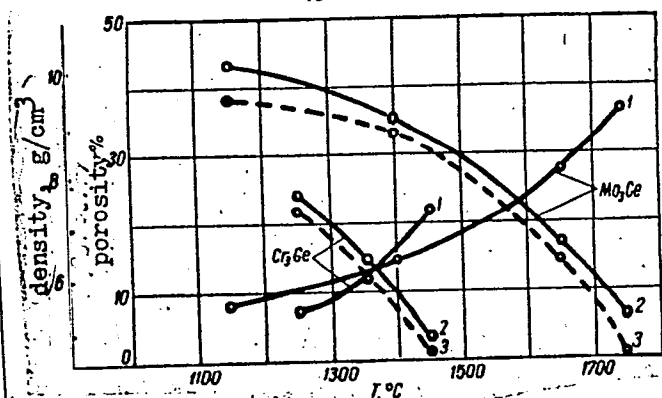


Fig. 1. Change in the density and porosity of Mo_3Ge and Cr_3Ge specimens as a function of the compression temperature: 1 - density, 2 - true porosity, 3 - apparent porosity.

50 μ . Orig. art. has: 1 table and 3 graphs.

SUB CODE: 11/

SUBM DATE: 13Feb65/

ORIG REF: 007/

OTH REF: 004

Card 2/2

L 41350-56 EWT(M), EWT(L)/EIT TOPIC 00
ACC NR: AP6020960 SOURCE CODE: UR/0226/66/000/006/0052/0059 44

AUTHOR: Bondarev, V. N.; Samsonov, G. V. 6

ORG: Institute of Physicochemical Principles for Ore Processing, AN SSSR
(Institut fiziko-khimicheskikh osnov pererabotki mineral' nogo syr' ya AN SSSR)
Institute for Problems in Science of Materials, AN UkrSSR (Institut problem
materialovedeniya AN USSR);

TITLE: Metal: chemistry of germanides 27

SOURCE: Poroshkovaya metallurgiya, no. 6, 1966, 52-59

TOPIC TAGS: germanide, germanium, ~~classification~~, crystal ^{structure,} ~~configuration,~~
electron structure, electron interaction, metal chemical analysis

ABSTRACT: Data on the interaction of germanium with the elements of periodic system are discussed on the basis of the electronic structure of isolated atoms, as well as on the basis of ideas on the formation of stable configurations in crystals.

Card 1/2

L 41350-66

ACC NR: AP6020960

A tentative classification of germanium is presented in the original article. Orig.
art. has: 4 figures. [Based on authors' abstract] [AM]

SUB CODE: 11, 20/ SUBM DATE: 17Mar66/ ORIG REF: 014/ OTH REF: 021/

Card 2/2 11b

ROGOZA, I.Ye., inzh.; BONDAREV, V.P., inzh.

Ways of increasing the stability of dinas brick crowns. Ogne-
upory 19 no.6:277-279 '54. (MIRA 11:10)

1. Gisogneupor i metallurgicheskiy zavod "Krasnyy Oktyabr'."
(Firebrick)

SUBJECT: USSR/Geology

5-2-21/35

AUTHOR: Bendarev, V.P.

TITLE: On the Genesis of Secondary Quartzites of the Rudnyy Altay (K voprosu o genezise vterichnykh kvartsitov Rudnogo Altaya)

PERIODICAL: Byulleten' Moskovskogo Obshchestva Ispytateley Prirody, Otdel Geologicheskiiy, 1957, # 2, pp 154-155 (USSR)

ABSTRACT: The study of secondary quartzites in the Bukhtarma region of the Rudnyy Altay has led the author to their classification into 3 genetic types which differ from one other in their genesis, mineral composition, structure, conditions of stratification and localization;

1. Those originated as a result of fumarole-solfatar activity of Devonian volcanism;
2. Those connected with the hydro-thermal activity of Hercynian magmatism:
 - a. developed in contact parts of granitoid massifs and
 - b. associated with tectonic dislocation zones,
3. Those originated by re-crystallization and re-depositing of silica-rich rocks affected by ore-bearing solutions.

Card 1/2

5-2-21/35

TITLE: On the Genesis of Secondary Quartzites of the Rudnyy Altay (K
voprosu o genezise vtorichnykh kvartsitov Rudnogo Altaya)
Secondary quartzites of the 3rd type are closely connected with
ore-processes and are found in many polymetal deposits of the
Rudnyy Altay.
No references are cited.

ASSOCIATION: Moskva Society of Investigators of Nature

PRESENTED BY:

SUBMITTED: On 10 January 1957

AVAILABLE: At the Library of Congress.

Card 2/2

BONDAREV, V.P.: Master Geolog-Mineralo Sci (diss) -- "The composition of ores, changes in the gangue content, and some features of the formation of the Zavod and Paryga polymetallic deposits of the Rudnoy Altay". Moscow, 1958. 28 pp (Min Higher Educ USSR, Moscow Inst of Nonferrous Metals and Gold im M.I. Kalinin), 150 copies (KL, No 1, 1959, 116)

AUTHOR: Bondarev, V. P.

SOV/130-58-11-6/16

TITLE: Improving the Production of Chromium-Molybdenum Steels
(Usovershenstvovaniye proizvodstva khromomolibdenovykh
staley)

PERIODICAL: Metallurg, 1958, Nr 11, pp 13 - 15 (USSR)

ABSTRACT: When chromium molybdenum steels were produced in 1950 at the "Krasnyy Oktiabr'" works for rolling into 180-250 mm diameter sections there was a high reject rate due to blisters under the crust. Some improvement was obtained with type 12MKh and 15KhM steels by melting them without preliminary deoxidation in the furnace with silicon. This technique was worked out jointly by the works TsZL and the Akademiya nauk USSR (Academy of Sciences of the Ukr. SSR). In 1957 tests were carried out to find the optimal ingot weight and teeming practice to enable flame deseaming before rolling to be eliminated. The steels (12MKh, 15KhM and 12KhMF) were melted in the normal way, described by the author, and tapped at 1630-1660°C into 6.1 instead of the usual 5.0-tonne ingot moulds. The moulds
Card 1/2 were painted with dried (less than 0.5% moisture) coal

SOV/130-58-11-6/16

Improving the Production of Chromium-Molybdenum Steels

lacquer and containing wooden frames. Pouring rate was controlled to prevent crust formation till the metal was one third of the way up the mould; hot-top mixture (I-28) was applied when the metal had filled two thirds of the hot-top. The use of the larger ingot moulds eliminated the blister trouble. All the test-heat ingots were rolled to 150-250 mm sections which were cooled for 72 hours in a pit. The non-metallic inclusions were well within the specifications of TU 2581 and the mechanical properties were all better than required. With the 6.1-tonne ingots metal loss after casting the ingots has been considerably reduced, from the old value of 35%.

ASSOCIATION: Zavod "Krasnyy Oktyabr'" ("Krasnyy Oktyabr'" Works)

Card 2/2

BONDAREV, V.P., kand.geologo-mineralogicheskikh nauk, assistant

Geobotanical observations in the region of the Zavodinskoye
complex metal deposits of the Rudnyy Altai. Izv. TSKhA
no.3:234-236. '60. (MIRA 14:4)
(Altai Mountains--Phytogeography)

BONDAREV, V.P.

Carbonate rocks as a raw material for the liming of sour soils
based on a study of the surrounding regions of the "Dubki"
training farm in the Naro-Fominsk region, Moscow Province.
Izv. vys. ucheb. zav.; geol. i razv. 7 no.11:66-70 N '64.
(MIRA 18:5)

1. Timiryazevskaya sel'skokhozyaystvennaya akademiya.

TOISTOI, I.I., prof.; BONDAREV, V.P., kand.geol.-mineral.nauk

Valuable raw material for mineral fertilizers; let's make wide use of industrial waste. Izvoda 53 no.8:68-73 '64. (MIRA 17:9)

1. Moskovskaya ssl'skokhozyaystvennaya akademiya im. Timiryazova.

L 04312-67 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6018390 (N)

SOURCE CODE: UR/0133/66/000/006/0540/0543

AUTHORS: Sandler, N. I.; Dobruskina, Sh. R.; Zadorozhnaya, L. K.; Bondarev, V. P.; Fel'dman, E. I.

ORG: Ukrainian Scientific Research Institute for Metals (Ukrainskiy n.-i. institut metallov); Factory "Red October" (Zavod Krasnyy Oktyabr')

TITLE: Low alloy manganese sheet steel containing niobium

54
B

SOURCE: Stal', no. 6, 1966, 540-543

TOPIC TAGS: alloy steel, niobium, sheet metal, metallurgic research / 10G2B alloy steel

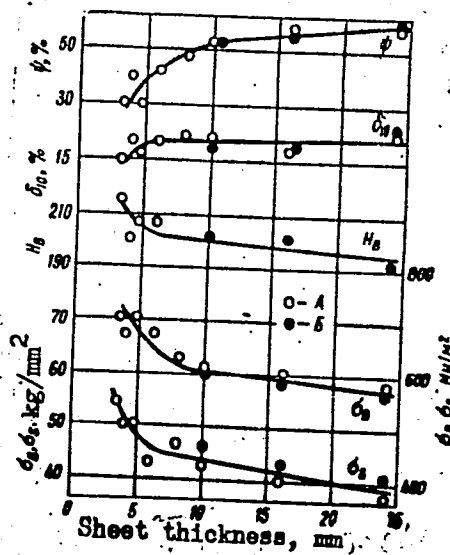
(ABSTRACT: The effect of small additions (0.033% and 0.035%) of niobium to steel 10G2B on the mechanical properties and microstructure of the latter was investigated. The investigation supplements the results of an earlier study by N. I. Sandler, Sh. R. Dobruskina, and S. T. Zaykov i dr. (Stal', 1965, No. 2). The specimens were obtained from 60- and 150-ton Martin steel furnaces of the "Red October" steel plant. The experimental results are presented in graphs and tables (see Fig. 1). It was found that steel 10G2B with 0.033% Nb smelted in 60- and 150-ton Martin furnaces possesses satisfactory mechanical properties and may be recommended for use in construction of agricultural machines and automobiles.

Card 1/2

UDC: 669.15-194:669.74:669.293

ACC NR: AP6018390

Fig. 1. Dependence of the mechanical properties of steel 10G2B, ingots A and B, on the sheet thickness. Ingot A: obtained from 60-ton, and B—from 150-ton Martin furnaces respectively.



Orig. art. has: 2 tables and 6 graphs.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 004

Cord 2/2 *gd*

BONDAREV, V. S.

"Experience in Designing 2-Trough Vibration Conveyors in the VNIITsvetmet Institute."

report presented at a coordination Conference on Problems of Design and Testing of Vibration type machinery, Mining Institute, Acad. Sci. USSR, 9-10 July 1958. (Izv. AN SSSR, Otdel Tekh Nauk 1958, No. 11, p. 152)

BONDAREV, V.S., inzh.

Designing suspended, hinged, and flexible roller supports.
Izv. vys. ucheb. zav.; gor. zhur. 6 no.8:61-68 '63.

(MIRA 16:10)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki.
Rekomendovana kafedroy rudnichnogo transporta.

BONDAREV, V.S.

GOL'DBERG, Mikhail Markovich; ZAKHAROV, Vasilii Aleksandrovich; KAZANSKIY, Yuriy Nikolayevich; LEONT'YEVA, Valentina Petrovna; LOSEV, Ivan Platonovich, doktor khim.nauk, prof.; TROSTYANSKAYA, Yelena Borisovna, doktor tekhn.nauk, prof.; KHAZANOV, Grigoriy Mikhaylovich; CHEBOTAREVSKIY, Vladimir Vladimirovich; SHEYDEMAN, Igor' Yur'yevich; BONDAREV, V.S., inzh., retsenzent; PANSHIN, B.I., kand. tekhn.nauk, nauchnyy red.; TUBYANSKAYA, F.G., izdat.red.; ROZHIN, V.P., tekhn.red

[Nonmetallic materials and their use in airplane construction]
Nemetallicheskie materialy i ikh primeneniye v aviastroenii. Pod
obshchel red. I.P.Loseva i E.V.Trostianskoi. Moskva, Gos. izd-vo
obor. promyshl., 1958. 428 p. (MIRA 11:7)

1. Kafedra "Tekhnologiya obrabotki nemetallicheskih materialov"
Moskovskogo aviatsionnogo tekhnologicheskogo instituta i kafedry
"Materialovedeniye" Moskovskogo aviatsionnogo ordena Lenina
instituta imeni S.Ordnshonikidze (for all except Bondarev, Panshin,
Tubyanskaya, Rozhin)

(Airplanes--Design and construction)
(Nonmetallic materials)

BONDAREV, V.S., inzh.

Study and calculation of the loading part of a belt conveyor.
Izv.vys.uchev.zav.:gor.zhur. 7 no. 4:129-137 '64. (MIRA 17:7)

1. Moskovskiy institut radioelektroniki i gornoy elektro-
mekhaniki.

Donatrev, V. V.

Chem

Alkylaryldianilino phosphazonesulfonaryls: V. I. Shevchenko
and V. V. Donatrev (Chem. Technol. Inst., Dnepropetrovsk),
Zhur. Obshch. Khim. 26, 270-1; J. Gen. Chem. U.S.S.R.,
26, 257-8 (1956) (Engl. translation); cf. preceding abstr. —
Treatment of 0.003 mole RONA in ROH with 0.003 mole
powd. $\text{ArSO}_2\text{N:PCl}_2(\text{NHPh})_2$ yields a ppt. of the product,
isolated after addn. of 10 ml. H_2O . The following were
formed in 85-95% yields, after crystn. from dil. EtOH:
 $\text{PhSO}_2\text{N:P}(\text{OMe})(\text{NHPh})_2$, m. 197-8°; *o*- $\text{MeC}_6\text{H}_4\text{SO}_2\text{N:P}$
 $(\text{OMe})(\text{NHPh})_2$, m. 183-7°; *p*-*Me* analog, m. 180-1°;
1- $\text{C}_6\text{H}_4\text{SO}_2\text{N:P}(\text{OMe})(\text{NHPh})_2$, m. 159-61°; 2-isomer, m.
188-91°; $\text{PhSO}_2\text{N:P}(\text{OEt})(\text{NHPh})_2$, m. 178-9°; *o*- MeC_6H_4
 $\text{SO}_2\text{N:P}(\text{OEt})(\text{NHPh})_2$, m. 113-14.5°; *p*-*Me* analog, m.
148-9°; *1*- $\text{C}_6\text{H}_4\text{SO}_2\text{N:P}(\text{OEt})(\text{NHPh})_2$, m. 158-9°; 2-
isomer, m. 166-7°. The MeO deriva. are 87% hydrolyzed
in 1 hr. with hot 0.2N aq. alc. NaOH, yielding ArSO_2NHFO
 $(\text{NHPh})_2$. A hot soln. of 0.03 mole 2- $\text{C}_6\text{H}_4\text{SO}_2\text{N:PCl}_2$ in
 CCl_4 was rapidly chilled and the fine ppt. was treated with
cooling with 0.08 mole PhNH_2 in CCl_4 ; after 24 hrs. the
ppt. was sepd. and extd. with hot C_6H_6 , yielding on cooling
the ext. 35.4% 2- $\text{C}_6\text{H}_4\text{SO}_2\text{N:P}(\text{NHPh})_2\text{Cl}$, m. 124-5°
(from C_6H_6), which (0.0005 mole) mixed with 2 ml. H_2O ,
treated with 0.2N NaOH until alk. to phenolphthalein, then
acidified with HCl to Congo red, gave 81.5% 2- $\text{C}_6\text{H}_4\text{SO}_2$
 $\text{NHFO}(\text{NHPh})_2$, m. 210-11°. G. M. Kosolapoff

21

5/000

PM 7/2

ALABUZHEV, P.M., prof.; BONDAREV, V.V., inzh.; ZUYEV, A.K., inzh.; KOPEYKIN,
G.F., inzh.; TRUS', A.M., inzh.; YARUNOV, A.M., inzh.

Dynamic strength of springs in impact action machines. Izv.vys.
ucheb.zav.; gor.zhur. 7 no.12:58-64 '64. (MIRA 18:2)

1. Novosibirskiy elektrotakhnicheskoy institut. Rekomendovana
kafedroy teoreticheskoy mekhaniki.

L 16919-65 EWT(m)/EWP(v)/EWA(d)/EWP(t)/EWP(k)/EWP(b) Pf-4 IJP(c) MJW/JD/HM

ACCESSION NR: AP4045721

S/0135/64/000/009/0016/0017

AUTHOR: Bondarev, V. V. (Engineer); Nikiforova, Z. V. (Engineer);
Ban'kovskaya, I. V. (Engineer) B

TITLE: Brazing of titanium plated with copper

SOURCE: Svarochnoye proizvodstvo, no. 9, 1964, 16-17

TOPIC TAGS: titanium brazing, OT4 titanium alloy brazing, copper plated titanium brazing, brazed joint microstructure, brazed joint strength

ABSTRACT: Flat plates of OT4 titanium alloy [U. S. RS110B] with a copper coating 10—30 μ thick were brazed to round copper bars using a preplaced 0.1 mm thick strip of brazing alloy (68% Ag, 27% Cu, 5% Sn). The assembled components were pressed together with a pressure of 2—3 kg/mm² to ensure a close contact between them and brazed in a vacuum of 0.001 mm Hg at 780—840C. It was found that for strong joints, titanium should have a plated copper layer 15—20 μ thick. Brazing should be done so as to form a diffusion zone 7—12 μ thick between the titanium and the coating. This can be accomplished

Card 1/2

L 16919-65

ACCESSION NR: AP4045721

S/0135/64/000/009/0016/0017 0

by brazing for 15—20 min at 790—810C. Brazing in this temperature range produced the strongest joints, with a tensile strength of 17.2—22.1 and 20.8—22.8 kg/mm² at 400C. At brazing temperatures higher than 820C, the reaction of titanium with the copper coating produces a brittle eutectic layer. The diffusion zone of the strongest joints is a titanium-copper solid solution with small inclusions of a second phase (1000—3000 Å in size). These inclusions strengthen the solid solution by pinning the dislocations. Orig. art. has: 4 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM, IE

NO REF SOV: 000

OTHER: 000

Card 2/2

ACCESSION NR: AT4007055

S/2598/63/000/010/0317/0321

AUTHOR: Shinyayev, A. Ya.; Bondarev, V. V.

TITLE: Brazing of electroplated AT-3 titanium alloy

SOURCE: AN SSSR. Institut metallurgii. Titan i yego splavy*, no. 10, 1963.
Issledovaniya titanovy*kh splavov, 317-321

TOPIC TAGS: titanium alloy brazing, AT-3 alloy brazing, AT-3 alloy electroplating, electroplated alloy brazing, silver coating, rhenium coating, rhodium coating, aluminum titanium chromium alloy, iron containing alloy, silicon containing alloy, boron containing alloy.

ABSTRACT: The authors investigated the effect of brazing coated AT-3 alloy on the stress rupture strength and adhesive properties of the electrochemical coatings of Ag, Rh, and Re as well as the effect of temperature and time to perform the electrolysis on the strength of the coated metals. The time to perform the electrolysis depended on the desired thickness of the galvanic coating. Microscopic investigation of the brazed alloys revealed that under equal brazing conditions an Rh coating produces a wider diffusion zone than do those of Ag and Re. This agrees with the characteristic rate of diffusion of the coating elements, which is much larger for Ag and Re than for Rh.

Card 1/2

ACCESSION NR: AT4007055

Satisfactory adhesive properties were obtained. It was proved that the coatings protect titanium satisfactorily against oxidation and diffusion of the brazing elements. Studies of the stress rupture strength of the brazed coated AT-3 proved that the maximum rupture strength for AT-3 with a Ag coating is reached at lower temperatures (780-790 C) than for Re (790-800 C) and Rh (800-810C) coatings. Orig. art. has: 4 figures & 2 tables.

ASSOCIATION: Institut metallurgii AN SSSR (Metallurgical Institute, AN SSSR)

SUBMITTED: 00

DATE ACQ: 27Dec63

ENCL: 00

SUB CODE: ML, MA

NO REF SOV: 005

OTHER: 000

Card

2/2

3
SHINYAYEV, A.Ya.; BONDAREV, V.V.

Investigating diffusion processes in the soldering of titanium
alloys. Trudy Inst. met. no.12:121-124 '63. (MIRA 16:6)

(Diffusion coatings)
(Titanium alloys--Welding)

ACCESSION NR: AT4009496

8/2509/63/000/01A/0086/0089

AUTHOR: Bondarev, V. V.; Shinyayev, A. Ya.

TITLE: Investigation of diffusion processes in soldering titanium with a rhenium coating

SOURCE: AN SSSR. Institut metallurgii. Trudy*, no. 14, 1963. Metallurgiya, metallovedeniye, fiziko-khimicheskiye metody* issledovaniya, 86-89

TOPIC TAGS: titanium, titanium soldering, soldering, rhenium coating, electroplating, titanium pickling, vacuum soldering

ABSTRACT: Because considerable difficulty is encountered in soldering titanium with other metals, the possibility of using rhenium to protect titanium alloys during high temperature soldering was investigated. Because rhenium is very strong and resistant to corrosion, it was expected that the soldered joints would have high mechanical strength. It was difficult to get a galvanic covering on titanium with strong adherence because of the formation of an oxide foam on the surface. The most effective way to eliminate this foam was pickling in hot sulfuric acid, thereby forming a surface hydroxide layer to protect the metal from further oxidation. An electromechanical process was used for the Re coating on 5 Ti-alloy

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ACCESSION NR: AT4009496

specimens which were then put in packages with copper plates and subjected to soldering in a vacuum. Microstructural examinations established that various diffusion zones were formed between the titanium and its covering. Results of mechanical tests and of metallographic examinations show that the strongest soldered connections were obtained by soldering at 780-820 C for 15-20 minutes. The strength attained was 19 kg/mm² with a rhenium covering 6-12 μ thick. At high temperatures, the formation of chemical compounds of the type Re₂Ti₅ takes place which causes brittleness of connections in the diffusion zone and marked weakening. Orig. art. has: 1 table and 1 figure.

ASSOCIATION: Institut metallurgii AN SSSR (Metallurgical Institute)

SUBMITTED: 00

DATE ACQ: 25Jan64

EWCL: 00

SUB CODE: ML

NO REF SOW: 010

OTHER: 001

Card 2/2

SHINYAYEV, A.Ya., kand.fiziko-matem. nauk; BONDAREV, V.V., inzh.

The soldering of titanium alloys. Svar. proizv. no.10:15-17 0 '63.
(MIRA 16:11)

1. Institut metallurgii im. Baykova.

BONDAREV, V.V.; STENDER, V.V.

Electrodeposition of cobalt-nickel coating on titanium and
its alloys. Zhur. prikl. khim. 37 no. 4:784-789 Ap '64.
(MIRA 17:5)

ACCESSION NR: AP4044899

S/0032/64/030/009/1106/1109

AUTHORS: Shinyayev, A. Ya; Bondarev, V. V.; Chernenko, M. S.

TITLE: Study of the mutual diffusion of metals by weakening of radioactive radiation

SOURCE: Zavodskaya laboratoriya, v. 30, no. 9, 1964, 1106-1109

TOPIC TAGS: diffusion annealing, radioactivity measurement/ TM 20 radiation counter

ABSTRACT: The authors propose a method for studying the chemical composition of zones of mutual diffusion. This method is based on the weakening of intensity of a narrow beam of gamma rays from a steady source. The principle requires a very narrow but intense beam of radiation, a means of positioning the specimen with great accuracy (within a few microns), and a maximal suppression of background in the counter (from scattering of electrons and gamma rays). A special apparatus was designed to meet these requirements. The radiation source was Te^{127} . For detection, a TM-20 counter was employed. A supplementary lead shield, 10 mm thick, was used to cut down on background noise. Diffusion pairs of Ti-Mo and Ti-Ni were studied, and the results are shown graphically in Fig. 1 on the

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ACCESSION NR: AP4044899

Enclosure. These results show that the weakening of a narrow beam of gamma rays may be used to analyze composition in the diffusion zone between metals when these metals are perfectly or partially soluble in each other. Quantitative determination requires diffusion annealing at a given temperature. The time of annealing must be chosen so as to give a diffusion zone 100 microns or more wide. Data on distribution of diffusing elements may be used to compute all diffusion characteristics of the mutual process. A major advantage of the method is the possibility of studying all elements in the periodic system, including the light elements. Orig. art. has: 3 figures and 3 formulas.

ASSOCIATION: Institut metallurgii im. A. A. Baykova (Institute of Metallurgy)

SUBMITTED: 00

ENCL: 01

SUB CODE: MM, NP

NO REF SOV: 004

OTHER: 003

Card 2/3

ACCESSION NR: AP4044899

ENCLOSURE: 01

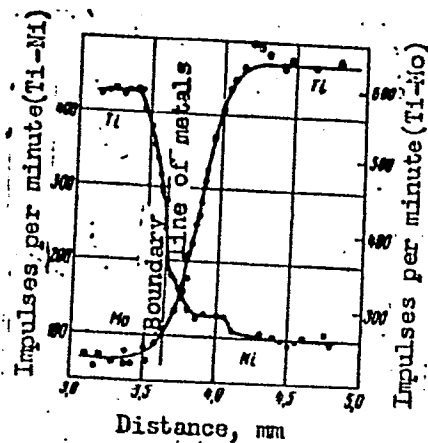


Fig. 1. Weakening in intensity of gamma rays on passing through different segments of the diffusion zone of Ti-Mo (annealed at 850C, 380 hours) and Ti-Ni (annealed at 743C, 2 hours).

Card 3/3

BONDAROV, V.V.; SHEVYAYEV, A. Ya.

Investigating diffusion processes in brazing titanium with a
rhenium coating. Trudy inst. met. no.14:86-89 '63

(MIRA 17:8)

L 02511-67 EWT(d)/EWT(m)/EWP(w)/EWP(c)/EWP(v)/I/EWP(c)/EII/EWP(k)/EWP(1) ISP(c)

ACC NR: AR6015964
JD

SOURCE CODE: UR/0277/65/000/012/0059/0059

AUTHOR: Alabuzhev, P. M.; Bondarev, V. V.; Kopeykin, G. F.; Trus', A. M.; Yarunov, A. M.

TITLE: Calculating the durability of cylindrical coil springs in impact-action machines 46
B

SOURCE: Ref. zh. Mashinostroitel'nyye materialy, konstruksii i raschet detaley mashin. Gidroprivod, Abs. 12.48.486

REF SOURCE: Sb. dokl. k Novosib. nauchno-tekhn. konferentsii po mashinostr. Ch. 2. Novosibirsk, 1964, 51-57

TOPIC TAGS: helical spring, impact strength, durability

ABSTRACT: A method is proposed for calculating the durability of cylindrical coil springs. The method is based on the energy theory for loss of work capacity of a spring under rotating loading. A formula is given for preliminary determination of the service life to destruction of a spring in impact-action machines. [Translation of abstract] 19

SUB CODE: 13

Card 1/1 *egh*

UDC: 621-272.2.001.24

ACCESSION NR: AP4032499

S/0080/64/037/004/0784/0789

AUTHOR: Bondarev, V. V.; Stender, V. V.

TITLE: Electroplating a cobalt-nickel coating on titanium and its alloys

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 4, 1964, 784-789

TOPIC TAGS: titanium, titanium alloy, coated titanium, coated titanium alloy, copper nickel electroplating, coating adhesion, oxidation, surface property, coating strength, microfracture, soldering, titanium coating heat treatment, diffusion zone, Ti_2Ni , Ti_2Co

ABSTRACT: The possibility of electroplating strongly adherent cobalt-nickel coatings onto titanium and its alloys containing α , $\alpha-\beta$, and β -phase stabilizing additives (VT-1, VT-5, OT-4, T-3, T-4, IRM-1, IRM-2) to improve their surface properties was investigated. It was found that adherence depends on the phase composition and the degree of stress of the base metal. Heat treating under vacuum significantly improves the adhesion of the coating. Maximum

Card 1/2

ACCESSION NR: AP4032499

strength was attained at 780-820C when a diffusion zone was formed comprising a solid solution of the coating components and titanium (Ti_2Ni and Ti_2Co) and separate non-overlapping sites in which a new phase, measuring 1800-2000 Å, was deposited. At higher temperatures the new phase overlaps continuously forming microfractures which reduce the strength of the coating. 15-25 micron Co-Ni coatings are not oxidized at 750-840C under vacuum of 5×10^{-2} - 10^{-5} mm. Hg, are readily wet by solders, but do not dissolve in them. Hence Co-Ni coated titanium and its alloys are protected during soldering with hard solders with different metals. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: None.

SUBMITTED: 16Apr62

ENCL: 00

SUB CODE: MM

NO REF SOV: 008

OTHER: 002

Card 2/2

BONDAREV, V.V., inzh.; NIKIFOROVA, Z.V., inzh.; ESN'KOVSKAYA, I.V., inzh.

Brazing titanium with the use of copper electroplating.

Svar. proizv. no.9:16-17 S '64.

(MIRA 17:12)

L 39975-65 EPA(s)-2/EWP(k)/EWP(z)/EWA(c)/EWT(m)/EPA(bb)-2/EWP(b)/T/EWA(d)/EWP(r)/
EWP(t) Pf-L/Pt-10/Pad IJP(c) JW/MJW/JD/HM/HW/GS

ACCESSION NR: AT4048087

S/0000/64/000/000/0289/0293

AUTHOR: Shinyayev, A. Ya.; Bondarev, V. V.; Sergeyeva, Ye. V.

TITLE: Investigation of mutual diffusion of titanium with copper and other metals
in soldered joints

SOURCE: Soveshchaniye po metallurgii, metallovedeniyu i primeneniyu titana i yego
splavov. 5th, Moscow, 1963. Metallovedeniye titana (Metallography of titanium);
trudy soveshchaniya. Moscow, Izd-vo Nauka, 1964, 289-293

TOPIC TAGS: titanium, titanium diffusion, titanium copper diffusion, titanium
silver diffusion, titanium chromium diffusion, titanium soldering

ABSTRACT: The authors' previous publications have shown that the strength of
soldered titanium joints is determined by the phase structure of the diffused layer
formed between the titanium and the protective galvanic coating during soldering.
Attempts were therefore made to determine the mutual diffusion of titanium and other
metals between 200 and 800C in order to evaluate the service life of soldered
joints. The tests were made with silver, copper, nickel, Co-Ni alloy (70% Co by
weight), chromium, rhodium and rhodium on titanium and AT3, AT4, VT1, VT4, VT5 and

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L 39975-65

ACCESSION NR: AT4048087

0

other titanium alloys. The samples were first etched in 40% sulfuric acid at $80 \pm 2^\circ\text{C}$ for 10-40 minutes. The kinetics of the process of mutual diffusion were then studied by calculating the rate of mutual diffusion as a function of the working temperature and by finding the phases formed between the titanium and metals dissolved in the titanium. Microscopic analysis was used to observe the mutual diffusion. At temperatures up to 400°C , there is almost no diffusion. At 500°C , mutual diffusion is observed between titanium and copper, and titanium and silver. Noticeable diffusion between titanium and Ni or Ti and the Co-Ni alloy begins only at temperatures above $600-700^\circ\text{C}$, and for the Cr coating - above 700°C . At these temperatures, the service life of soldered joints drops sharply. The service life can also be evaluated by determining the chemical composition of the diffusion zone. This is done by radioactive techniques. The sample is located on a plate which slides along slots made in a holder, and the radiation is registered by a TM-20 meter located above the upper screens of the holder. By means of curves plotted according to the meter readings, and knowing the attenuation coefficient in pure components and in a two-component medium, it is possible to find the distribution of diffused elements in the diffusion zone. The results of this investi-

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1 39975-65

ACCESSION NR: AT4048087

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gation allow one to conclude that the process of mutual diffusion of titanium with other elements develops at the following temperatures: silver²⁷ and copper - above 500C, Co-Ni¹⁷ alloy - above 600C, chromium - above 700C. The formation of large (0.2-0.5 micron) zones of a second phase due to micro-cracks⁶ in the diffusion zone of a Ti-galvanic coating⁴ at working temperatures leads to abrupt weakening of the soldered joint and its failure. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 15Jul64

ENCL: 00

SUB CODE: MM

NO REF SOV: 001

OTHER: 001

Caró 3/3 ^{mb}

L 38560-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/T/EWP(t)/EWP(k)/ETI/EWP(h)/EWP(l) IJP(c)

ACC NR: AT6012408 JD/JG/GD

SOURCE CODE: UR/0000/65/000/000/0309/0311

AUTHORS: Bondarev, V. V.; Shinyayev, A. Ia.

ORG: none

TITLE: Diffusion layers and strength of soldered joints of titanium using electroplating of precious metals

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 309-311

platinum, palladium, rhodium, adhesion,
TOPIC TAGS: diffusion soldering, metal soldering, metallurgic testing machine, titanium alloy, electroplating / R-5 metallurgic testing machine

ABSTRACT: The authors' previous work on the strength of diffusion soldered joints (Svarochnoye proizvodstvo, 1963, No. 10,15) is supplemented by this investigation of the adhesion strength of electroplated platinum, palladium, and rhodium layers on a titanium alloy base under different conditions of heat treatment. Adhesion strength was measured by soldering soft and hard solder to the electroplated layers and applying a tensile load on an R-5 testing machine. It was found that by using cold solder (72--128C melting temperature) adhesion strengths of 0.3--1.2, 0.2--0.3 and 0.8--1.8 kg/mm² were obtained respectively for Pt, Pd, and Rh. Adhesion strength increased considerably with increasing soldering temperature (hard solder) as shown

Card 1/2

L 38500-00

ACC NR: AT6012408

in Fig. 1, reaching a maximum at ≈ 780 -- 800°C . The soldering atmosphere affected the adhesion strength (due to the porosity of the layers), with argon, helium, or

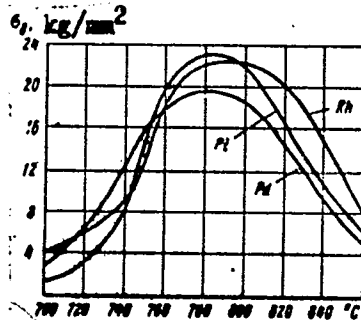


Fig. 1. Adhesion strength of electroplated precious metal layers on titanium as a function of soldering temperature (20 min duration).

vacuum most effective. Two sample photographs of the microstructure of the titanium alloy-precious metal interface are presented. Orig. art. has: 3 figures.

SUB CODE: 11, 13/

SUBM DATE: 02Dec65/

ORIG REF: 008/

OTH REF: 001

Card 2/2/MLP

L 38559-66 EWT(m)/ENP(V)/I/ENP(C)/ETI/ENP(N)

ACC NR: AT6012407

SOURCE CODE: UR/0000/65/000/000/0305/0308

AUTHORS: Shinyayev, A. Ya.; Bondarev, V. V.

ORG: none

TITLE: Diffusion soldering of titanium

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 305-308

TOPIC TAGS: ^{COPPER} titanium alloy, metal soldering, diffusion soldering, metal joining / AT3 titanium alloy, OTh titanium alloy

ABSTRACT: Diffusion soldering of AT3 and OTh titanium alloys through an intermediate layer of copper and through a triple layer of copper--(alloy--cobalt nickel)--copper was investigated. The soldering was performed in a vacuum ($5 \cdot 10^{-2}$ - 10^{-3} mm), at a specimen pressure of 3--5 kg/mm², at temperatures of 800--1000C for up to one hour, through 6--25 micron thick intermediate layers. The strength and diffusion depth of the soldered joints were measured for various temperature conditions and duration of contact. It was found that below 885C the metals could not be soldered through a 20--25 micron thick copper layer. Above this temperature the strength of the soldered joint increased to 25 kg/mm² at 940C (for 30 minutes) and then decreased for higher soldering temperatures. Soldering with the triple intermediate layer

Card 1/2

L 38559-56

ACC NR: AT6012407

gave best results (55--75 kg/mm²) at a soldering temperature of 950--970C (for 60--15 minutes respectively). Microstructural observations (sample photographs are presented) show that the strongest joints correspond to the formation of single-phase diffusion layers of 60--100 micron thickness. Orig. art. has: 2 figures.

SUB CODE: 11, 13/

SUBM DATE: 02Dec65/

ORIG REF: 002/

OTH REF: 002

Card 2/2 *MCP*

L 03035-67 EWP(k)/ENT(m)/T/EWP(v)/EWP(t)/STI IJP(c) JD/HE
ACC NR: AP6023437

SOURCE CODE: UR/0135/66/000/007/0014/0016

AUTHOR: Shinyayev, A. Ya. (Candidate of physico-mathematical sciences); Bondarev, V.
V. (Candidate of technical sciences)

ORG: IMYeT im A. A. Baykov (IMYeT)

33
B

TITLE: Diffusion brazing of titanium with the aid of intermediate galvanic coatings

SOURCE: Svarochnoye proizvodstvo, no. 7, 1966, 14-16

TOPIC TAGS: metal diffusion plating, titanium alloy/ VT1 titanium alloy, AT3 titanium alloy, OT4 titanium alloy

ABSTRACT: The conditions for producing high strength titanium joints by means of diffusion brazing and intermediate galvanic coatings with a low melting eutectic serving as a solder are studied. Tests were made on VT1, AT3 and OT4 titanium alloy specimens. Copper and layers of Cu-Ni-Cu and Cu-(CO-Ni)-Cu were used as galvanic coatings. Titanium specimens were degreased by organic and standard chemical solutions. Scale and oxide layers were cleaned by sandblasting, then pickled in a mixture of fluoric and nitric acids. The titanium hydrate layer was found by dipping the specimens in a 40% sulphuric acid solution at $80 \pm 2^\circ\text{C}$ for 30 min. Galvanic coatings 20-25 μ thick were deposited from standard electrolytes and cyanide electrolytes on the surfaces to be brazed. Brazing conditions: vacuum-- 10^{-2} - 10^{-3} mm/Hg (0°C), unit pressure--3-5 kg/cm², brazing temperature--860-1000°C. Exposure varied from 1 min to 1 hour and the speci-

Card 1/2

UDC: 621.791.3:539.375.3.621.357.7.669.295

L 03035-07

ACC NR: AP6023437

mens were tested for tensile strength; joints were always sheared by the eutectic. With higher temperature, the eutectic components diffused into the base metal, decreasing the thickness of the eutectic and increasing the strength of the joint. The optimal temperature range was found to be 940-960°C. Higher temperatures (1000°C) caused considerable growth in grain size in the base metal, decreasing the strength of the joint. Electron microscope has shown that the eutectic had many overlapped microcracks of 0.2-0.4 μ in diameter. In order to reduce this destructive effect, the eutectic thickness must be brought to an optimal value of 6-9 μ . However, the eutectic could be replaced by a "diffusion zone" of thickness 30-40 μ if the brazing process was carried out at temperature >930°C. The maximum strength was: 1) 26-28 kg/mm² for the copper galvanic coating when exposed for (15-30 min) at temperatures of 960-970°C; 2) 38-40 kg/mm² for (Cu-Ni-Cu) coating when exposed for 15-30 min at 960-970°C; 3) 67-75 kg/mm² for [Cu-(Co-Ni)-Cu] coating when exposed for 15 min at temperatures of 960-970°C. Orig. art. has: 2 figures, 1 table.

SUB CODE: 13/

SUBM DATE: none/

ORIG REF: 006

rs
Card 2/2

BONDAREV, V.Ya.

Epidemiology and the prevention of trichinelliasis in the
Adyge Autonomous Province. Med. paraz.i paraz.bol. 34
no.4:445-447 J1-Ag '65. (MIRA 18:12)

1. Parazitologicheskiy otdel Adygeyskoy oblastnoy sanitarno-
epidemiologicheskoy stantsii, Maykop. Submitted April 13,
1964.

ZAKHAROV, R.S., inzh.; BONDAREV, Ya.I., inzh.

Automatically controlled deisel-generator installation, DGA-200.
Energomashinostroenie 6 no.5:38 My '60. (MIRA 13:9)
(Automatic control) (Diesel engines)
(Electric generators)

BONDAREV, Yakov Leont'yevich; GRAYFER, Arnold Grigor'yevich;
PERFILOV, I.F., inzh., red.

[Preparing large reinforced concrete pipes and silo rings with immediate removal of forms; practices of the No.23 Plant for Reinforced Concrete Products of the Main Administration of the Building Materials Industry of Moscow] Izgotovlenie krupnorazmernykh zhelezobetonnykh trub i silosnykh kolets s nemedlennoi raspalubkoi; opyt zavoda zhelezobetonnykh izdelii No.23 Glavmospromstroimaterialov. Moskva, Gosstroizdat, 1963. 44 p. (MIRA 17:12)

1. Moscow. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.
2. Direktor zavoda zhelezobetonnykh izdeliy No.23 Glavnogo upravleniya promyshlennosti stroitel'nykh materialov i stroitel'nykh detaley (for Bondarev).
3. Nachal'nik proizvodstvenno-tekhnicheskogo otdela zavoda zhelezobetonnykh izdeliy No.23 Glavnogo upravleniya promyshlennosti stroitel'nykh materialov i stroitel'nykh detaley (for Grayfer).

BONDAREV, Ye.N. (Moskva)

Time for the establishment of a steady flow in the bottom area.

Izv. AN SSSR. Mekh. i mashinostr. no. 5:167-168 S-0 '63.

(MIRA 16:12)

BONDAREV, Ye.N. (Moskva); YUDELOVICH, M.Ya. (Moskva)

Increasing bottom pressure beyond the wedge in flights at hypersonic speed. Izv. AN SSSR. Otd. tekhn. nauk. Mekh. i mashinostr. no. 5:186 S-O '60. (MIRA 13:9)

(Aerodynamics, Hypersonic)

ACCESSION NR: AP4041425

S/0179/64/000/003/0166/0167

AUTHOR: Bondarev, Ya. N.

TITLE: Approximate evaluation of the effects of a turbulent boundary layer and the ratio of specific heat capacities on the base pressure behind a flat recess

SOURCE: AN SSSR. Izv. Mekhanika i mashinostroyeniye, no. 3, 1964, 166-167

TOPIC TAGS: base pressure, flat recess pressure diagram, turbulent boundary layer effect, specific heat capacity effect, base pressure calculation, flat recess aerodynamic characteristic, aerodynamics

ABSTRACT: The author assumes, in contrast to previous publications, that full pressure is preserved along each stream of gas in a boundary layer when a flow is deflected at a base recess (see Fig. 1 in the Enclosure), since the flow expansion area behind cross sections 1 and 2 is small and corresponds in magnitude to the thickness of the boundary layer δ_1 in the onrushing flow. It is further assumed that velocity profiles in area 3 are similar to those for area 2 at $h \gg \delta_1$ (where h is the height of a recess) and are independent of the boundary layer, while the scale coefficient σ' (governed by the magnitude of turbulent viscosity in the flow's boundary layer) is similar to that for free flows. Results indicate

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ACCESSION NR: AP4041⁴325

that base pressure increases with S/h , while the effect of a boundary layer increases with M_1 . Basic pressure exhibits little variation in relation to changes in specific heat γ at low M_1 numbers and increases with γ at $M_1 = 3$ or 4. Orig. art. has: 3 graphs and 3 equations.

ASSOCIATION: none

SUBMITTED: 12Nov63

DATE REC. 23-1-64

ENCL: 01

SUB CODE: ME

NO REF SOV: 001

OTHER: 001

Card 2/3

ACCESSION NR: AP4041425

ENCLOSURE: 01
S/0179/64/000/003/0166/0167

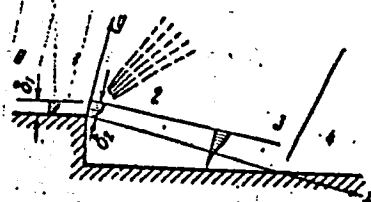


Figure 1.

0-1 flow ahead of trailing edge, 1-2 expansion flow at trailing edge, 2-3 mix flow behind recess, 3-4 compression shock

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I 03/16-67 EWP(m)/EWT(1) WW
ACC NR: AP6034547

SOURCE CODE: UR/0421/66/000/005/0118/0120

AUTHOR: Bondarev, Ye. N. (Moscow)

ORG: none

TITLE: Approximate calculation of supersonic flow-laminar layer interaction in the separation zone

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 5, 1966, 118-120

TOPIC TAGS: supersonic aerodynamics, fluid mechanics, laminar boundary layer, boundary layer flow, boundary layer separation, aerodynamic heat transfer

ABSTRACT: Supersonic flow-laminar boundary layer interaction in the separation zone is considered and the conditions which govern the onset of separation are investigated. The integral method of Cohen and Rechetko was used for calculating the flow in the boundary layer, but without its simplifying assumptions. Besides analyzing the flow in various sections (see Fig. 1), the author discusses the techniques and

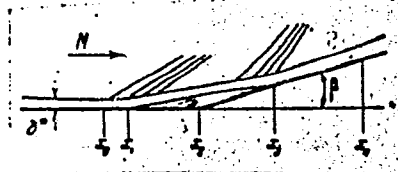


Fig. 1. Flow configuration

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ACC NR: AP6034547

results found in previous works on the subject. Approximate calculations were made of pressure distribution, friction, and heat-transfer coefficients in the separation zone of the laminar boundary layer on a flat plate with a wedge having an apex angle β . It was assumed that: 1) the external flow is parallel to the wedge surface at the end of the interaction zone; 2) the pressure gradient is equal to zero; 3) the pressure on the wedge does not correspond to the pressure in the flow isentropically deflected at angle β ; 4) the relationships between the integral parameters of the boundary layer correspond to those of a flow on a flat plate. The results of calculations at $M = 2$, $R_0 = 0.26 \times 10^6$, and $\beta = 0.0873, 0.1309$, and 0.1745 radians are plotted. A comparison of theoretical and experimental data on the dependence of M^* on R^* , plotted in Fig. 2 for various values of angle β , shows rather good

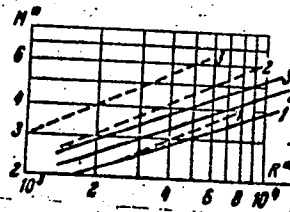


Fig. 2. M^* versus R^* :

— experimental data; ---- theoretical data

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ACC NR: AP6034547

agreement for small values of β , though for large values of β , the theoretical separation occurs somewhat earlier than that found experimentally. The results also show that the length of separated flow increases with R^* and almost exponentially with C_p^* . Orig. art. has: 5 figures and 3 formulas.

SUB CODE: 20/ SUBM DATE: 25Nov65/ ORIG REF: 001/ OTH REF: 010/ ATD PRESS: 5103

Card 3/3

BONDAREV, Ye. Z.

Astronomy - Study and Teaching

Ideological and political education of students during lessons of astronomy,
Fiz. v shkole, No. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, March 1952. Unclassified

BONDAREV, Yuriy.

Na bol'shoy reke [on the great river] rasskazy. Moskva, Sovetskiy pisatel', 1953.
237 p.

Flc.
.B62

BONDAREV, Yuriy Alekseyevich; YEREMIN, -N.I., red.; KHAKHAM, Ya.M.,
tekhn. red.

[Use of plastics in the manufacture of machinery] Ispol'zovanie
plastmass v mashinostroenii. Ul'ianovsk, Ul'ianovskoe knizhnoe
izd-vo, 1960. 36 p. (MIRA 16:7)
(Machinery--Design and construction) (Plastics)

1. BONDAREV, YU. F.

2. USSR (600)

4. Cattle

7. Red Steppe cattle. Sov. zootekh. 7 No.2, 1952. Kandidat Sel'skokhozyayst vennykh Nauk Vsesoyuznyy Institut "Askaniya-Nova"

9. Monthly List of Russian Accessions, Library of Congress. August, 1952. Unclassified.

BONDAREV Yu. F.

USSR / Farm Animals.

Q-2

Abs Jour : Ref Zhur - Biol., No 10, 1958, No 45165

Author : Bondarev, Yu. F.

Inst : Not given

Title : The Raising and Utilization of the Breeding Bulls of the Red Steppe Breed.

Orig Pub : Vestn. s.-kh. n., 1957, No. 1, 71-79

Abstract : On the basis of the study and of the summing up of the experience of leading kolkhozes and sovkhozes, and as a result of pertinent experiments carried out, the Institute "Askaniya-Nova" has developed a differentiated system for raising young bulls and heifers, from birth up to adult age; the recommended daily feeding formulas for the breeding bulls and the directions for their management are also provided.

Card 1/1

Q-3

USSR/Farm Animals - Cattle.

Abs Jour : Ref Zhur - Biol., No 7, 1958, 309⁴⁵

Author : Bondarev Yu. F.

Inst : -
Title : On the Unsystematic Crossing and Purebred Raising of the Red Steppe Cattle.
(O bessistemnom skreshchivanii i chistopородnom razvedenii krasnogo stepnogo skota).

Orig Pub : Molochn. i myasnoye zhivotnovodstvo, 1957, No 5, 36-38

Abstract : Brief characteristics (milk yield, milk fatness, live weight and slaughter output) of the Red Steppe breed are given. The unsystematic crossing of this breed with other breeds (meat type, dairy type, fat-dairy type) is pointed out. The purebred raising of the Red Steppe cattle is recommended.

Card 1/1

Q-2

USSR/Farm Animals - Cattle.

Abs Jour : Ref Zhur - Biol., No 1, 1959, 2633

Author : Dondarev, Yu.F.

Inst : Ukrainian Scientific Research Institute of Animal Husbandry "Askaniya-Nova"

Title : The Evolution of the Red Steppe Breed of Cattle.

Orig Pub : Tr. Ukr. n.-i. in-ta zhivotnovodstva "Askaniya-Nova", 1957, 6, 113-128.

Abstract : In 1955 the number of animals of the Red Steppe breed in kolkhozes and sovkhozes amounted to approximately 3.3 million head, or 24.3% of the total pedigreed cattle. In the modern herds of this breed, the milk yield has doubled compared with the year 1910, and the live weight increased by 15-20%. On the leading farms, the mean milk

Card 1/2

BONDAREV, Yu.F., kand.sel'skokhozyaystvennykh nauk

Increasing the fat content of milk in Red Steppe cattle. Zhivot-
novodstvo 21 no.5:72-77 My '59. (MIRA 12:7)

1. Odesskaya gosudarstvennaya sel'skokhozyaystvennaya opytnaya
stantsiya.

(Dairy cattle breeding)

BONDAREV, Yu.F., kandidat sel'khoz. nauk; KONONENKO, N.V., nauchnyy
sotrudnik

Rybak ZAN-39 line of the Red Steppe cattle developed for breeding
purposes and high butterfat production. Trudy "Ask.-Nov." 8:51-72
'60. (MIRA 14:4)

(Dairy cattle breeding)

MERKIN, I.Kh.; BONDAREV, Yu.P.

Automatic compartment-type drying chamber. P '60.
(MIRA 13:6)

1. Giprodrevprom.
(Lumber--Drying) (Furniture)

BONDARIV, Ye.I.

Fibromyoma of the stomach. Vest. rent. i rad. 40 no.4:
69-70 Ji-Ag '65. (MIRA 18:9)

1. Belgorodskaya oblastnaya bol'nitsa (glavnyy vrach Ye.I.
Sergeyev).